

Work Order ID 63527

Wednesday, November 03, 2010 2:54:03 PM



Page 1

Item ID: D206-667-203

Revision ID:

Item Name: Crosstube Aft

Start Date: 11/3/2010 Start Qty: 1.00

Required Date: 11/18/2010 Req'd Qty: 1.00

Reference:

Approvals: Process Plan:

QC:

Date: 10-11-07

Date:

Tooling:

SPC (Y/N):

Date:

Date:

Setup Start

Stop

Run Start

Stop

Cust Item ID:

Customer:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D206-667-243

Rev C

100



DOCUMENT CONTROL

DC

Document Control

Memo

Photocopy bluefile and create labels as per PPP D206-667-203 CHG003

110

CNC Bend 2

CNC Alpha 160 Bender

BENDING MACHINE - CROSSTUBES

Memo

Bend tube as per Dwg D206-667-243 using CNC bender program 206L-AF

120



QC15- Crosstube Dimensional Check

QC

Quality Control

Memo

0.00

0.00

10-11-17

60

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 63527

Wednesday, November 03, 2010 2:54:03 PM



Page 2

Item ID: D206-667-203**Revision ID:****Item Name:** Crosstube Aft**Start Date:** 11/3/2010 **Start Qty:** 1.00**Accept****Setup****Start****Required Date:** 11/18/2010 **Req'd Qty:** 1.00**Cust Item ID:****Customer:****Reference:****Approvals:****Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**Run****Start****QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Stop****Sequence ID/
Work Center ID**

130



Crosstubes

Crosstubes

**Operation
Description****Set Up/
Run Hours****Tool ID****Tool #****Plan
Code****Accept
Qty****Reject
Qty****Reject
Number****Insp.
Stamp**

0.00

Crosstubes

0.00

Memo
1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 as per Dwg D206-667-243 and drill table DT8577. Locate hole #6 for towers as per QSI 10. Drill all (3) top holes.

2-Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243 Check dimensions between holes on all four sides.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8583 & DT8584 as per Dwg D206-667-243. Drill only the top (2) holes.

5-Drill & ream the top (2) holes to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243

6-Drill Fwd rivet holes using drill Jig DT8789FWD as per Dwg D206-667-143. Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT8789 as per Dwg D206-667-243.

8-C'sink holes as per Dwg D206-667-243.

9 -Scribe part # and batch # using vibrating stylus as per Dwg D206-667-243
Inside of Cuff(Donot engrave on outside of tube)

10 -Deburr & Inspect for surface damage. Repair damage within limits as per

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Work Order ID 63527

Wednesday, November 03, 2010 2:54:03 PM



Page 3

Item ID: D206-667-203

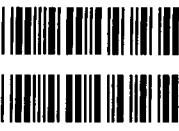
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Start Date: 11/3/2010 Start Qty: 1.00

Required Date: 11/18/2010 Req'd Qty: 1.00

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:	Stop		

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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140 	Crosstubes Chemical Conversion Dwg D206-667-243	0.00	SAD 10-11-19						
HandFXtube	Memo	0.00							
Hand Finishing Crosstubes									

150 	QC3- Inspect Part Finish QC	0.00	S 10/11/19						
Quality Control	Memo	0.00							

160 	QC5- Inspect part completeness to step on W/O QC	0.00	S 10/11/19						
Quality Control	Memo	0.00							

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Work Order ID 63527

Wednesday, November 03, 2010 2:54:03 PM



Page 4

Item ID: D206-667-203

Accept



Setup Start



Revision ID:

Item Name: Crosstube Aft

Stop



Start Date: 11/3/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 11/18/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170



Outsource process - NDT per QSI038 4.1

0.00

CZ 10/11/23 (1)

Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038Or
Issue P/O: 12987
LPI as per ASTM 1417
Level 2 Attach copy of NDT results to work order

180



Packaging

0.00

P 10/11/23 (1)

Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

190



QC5- Inspect part completeness to step on W/O

0.00

10 11 23 (1)

QC

Memo

0.00

Quality Control

Ensure results are as per Dwg D206-667-243

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Work Order ID 63527

Wednesday, November 03, 2010 2:54:03 PM



Page 5

Item ID: D206-667-203

Accept



Setup Start



Revision ID:

Item Name: Crosstube Aft

Stop



Start Date: 11/3/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 11/18/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center ID

200

Operation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

0.00

SprayPaint

0.00



Memo

1-Prime inside and outside crosstube as per QSI 005 4.2
2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME:

Start Time: 10:00Finish Time: 11:00

PAINT:

Start Time: 3:00Finish Time: 4:00

210



QC

QC14- Inspect Spray Paint

0.00

M 10 11 25 ①

Quality Control

Memo

Wrap in plastic bag to protect from scratches

45 10 11 29 ①

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Work Order ID 63527

Wednesday, November 03, 2010 2:54:03 PM



Page 6

Item ID: D206-667-203

Accept



Setup Start



Revision ID:

Item Name: Crosstube Aft

Stop



Start Date: 11/3/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 11/18/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

220



Crosstubes

0.00

m 10

11 29 ①

Crosstubes

Memo

0.00

Crosstubes

1-Install nut plates as per Dwg D206-667-243.

230



Skidtubes

0.00

m 10

11 29 ①

Crosstubes

Memo

0.00

Crosstubes

1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI
015. Let cure for 12h after installation and prior to packaging. Note: (3) top
holes should be facing up.A/R Magnobond 6398: 15580 exp: 07/20112-Install supports and clamps as per Dwg D206-667-243. Torque clamps to 80-
100 in lb *m* 18/11/30 ①

W/O:		WORK ORDER CHANGES					
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Work Order ID 63527

Wednesday, November 03, 2010 2:54:03 PM



Page 7

Item ID: D206-667-203

Accept



Setup Start



Revision ID:

Item Name: Crosstube Aft

Stop



Start Date: 11/3/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 11/18/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

240



QC

Quality Control

Operation
Description

QC5- Inspect part completeness to step on W/O

Set Up/
Run Hours

0.00

S101130

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

250



Packaging

Packaging

Pick Kit

0.00

(+)

101130

260



QC

Quality Control

QC4- 100% Inspect kits for completeness

0.00

S101130

(A)

101130

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Work Order ID 63527

Wednesday, November 03, 2010 2:54:03 PM



Page 8

Item ID: D206-667-203

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Start Date: 11/3/2010 Start Qty: 1.00

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Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270 	Packaging	0.00				10/11/30	sf		
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D206-667-203 Location: 53 PPP Rev: D								
280 	QC21- Final Inspection - Work Order Release	0.00				10/12/01	78		
QC	Memo	0.00							
Quality Control									

BS 10-12-1
①

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Picklist Print

Wednesday, November 03, 2010 2:54:07 PM

Page 1

Work Order ID: 63527



Parent Item: D206-667-203



Parent Item Name: Crosstube Aft

Start Date: 11/3/2010

Required Date: 11/18/2010

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev:F 05.09.01 Add holes for compatibility with Bell Skidtubes KJ/JLM
IPP Rev:G 08-06-03 update as per DSI9415 (ECN1198) DD verified by:ec
IPP Rev:H 08-07-18 remove thread masking in step 12 DD verified by:EC
IPP Rev:I 08-12-15 add magnobond DD verified by:EC
IPP Rev J 09.01.06 ECN 08-562 EC verified by:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D206-667-203TRN



Manufactured

No

220

Each

2.0000



Location B63636 Loc Qty

Loc Code

LG

2

62633

1

62634

1

D2873-043



Manufactured

No

220

Each

12.0000



Nut Plate Assembly

Location Loc Qty Loc Code

LG

10

62380

10

ST

2

60981

2

D2873-045



Manufactured

No

220

Each

10.0000



Nut Plate Assembly

Location Loc Qty Loc Code

LG

10

60982

4

62378

6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Picklist Print

Wednesday, November 03, 2010 2:54:07 PM

Page 2

Work Order ID: 63527



Parent Item: D206-667-203



Parent Item Name: Crosstube Aft

Start Date: 11/3/2010

Required Date: 11/18/2010

Start Qty: 1.00

Required Qty: 1.00

D2892-1



Support

Manufactured No

230

Each

44.0000



2



10.11.29

Location	Loc Qty	Loc Code
LG	44	
41986	12	
42785	20	
62592	12	

D3595-063-450



RUBBER CUSHION

Manufactured No

230

Each

68.9990



4

10.11.29

Location	Loc Qty	Loc Code
LG	68.99897368	
53775	5.97897368	
58161	3.56	
59580	0.12	
61465	29.34	
62535	30	

MS20601-AD4W10



RIVET

Purchased No

230

Each

76.0000



14

10.11.29

Location	Loc Qty	Loc Code
LG051	76	
114245	2	
115405	2	
115881	72	

MS21920-22



Clamp(per MIL-DTL-8783C)

Purchased No

230

Each

42.0000



4

10.11.29

Location	Loc Qty	Loc Code
LG	42	
114077	42	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Wednesday, November 03, 2010 2:54:07 PM

Page 3

Work Order ID: 63527



Parent Item: D206-667-203



Parent Item Name: Crosstube Aft

Start Date: 11/3/2010

Required Date: 11/18/2010

Start Qty: 1.00

Required Qty: 1.00

AN5-10A

Purchased

No

250

Each

252.0000

10

10



Bolt



10/11/30 SP

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST337	252	
115429	15	
115589	100	
115700	137	

AN5-32A

Purchased

No

250

Each

252.0000

4

4



Bolt



10/11/30 SP

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST340	252	
114405	42	
115016	50	
115108	50	
115589	60	
115698	50	

AN5-34A

Purchased

No

250

Each

68.0000

4



Bolt



10/11/30 SP

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST340	68	
113149	2	
113226	26	
115835	20	
116003	20	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Wednesday, November 03, 2010 2:54:07 PM

Page 4

Work Order ID: 63527



Parent Item: D206-667-203



Parent Item Name: Crosstube Aft

Start Date: 11/3/2010

Required Date: 11/18/2010

Start Qty: 1.00

Required Qty: 1.00

AN960JD516

NAS1149D0563J Purchased

No

250

Each

34.0000

18

18



11/4/10 10/11/30 SP

Washer

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST	34	
103694	18	
107534	12	
109287	4	

250 Each 731.0000 4



10/11/30 SP

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST139	26	
114813	26	
ST300	705	
115156	205	
115594	500	Y

MS21042L5

Purchased

No

Nut

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

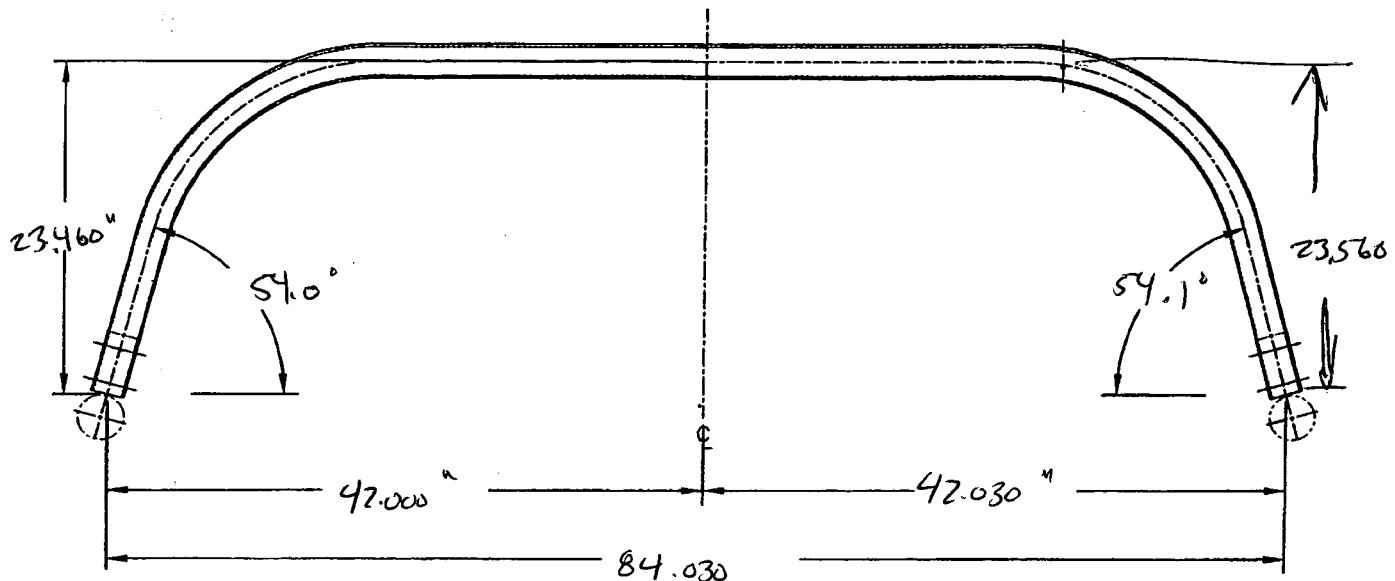
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	63527
Description: Crosstube High Aft (206L)	Part Number:	D206-667-203
Inspection Dwg: D206-667-243	Rev: C	Page 1 of 1

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.1



Comments

QC15 Inspection	8
Date	10/14/18

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.11.17	Dwg Rev updated	KJ	
C	09.12.14	Dimensions update per Dwg Rev C	KJ	

W/O:		WORK ORDER CHANGES					
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Item	Qty -243	Part Number	Description
1	X	D206-667-243	CROSSTUBE ASSEMBLY (206L HIGH AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6004-115
FINISHED LENGTH = 104.91±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-243" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 21.9 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE PLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE
D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE
LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COP
RETURN
ENGINEER
UNCONTR
SUBJECT
W
V
NO. 63327
P 10.11.03

RELEASED
(8/11/03)

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-450 WAS D2858-400-773 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN A-3, C5-3, D3-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	99	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	IP		
MFG. APPR.	E	DRAWING NO.	REV. C
APPROVED	IP	D206-667-243	SHEET 1 OF 4
DE APPR.	IP	TITLE	SCALE
DATE	08.11.06	CROSSTUBE ASSY (206L HIGH AFT)	NTS

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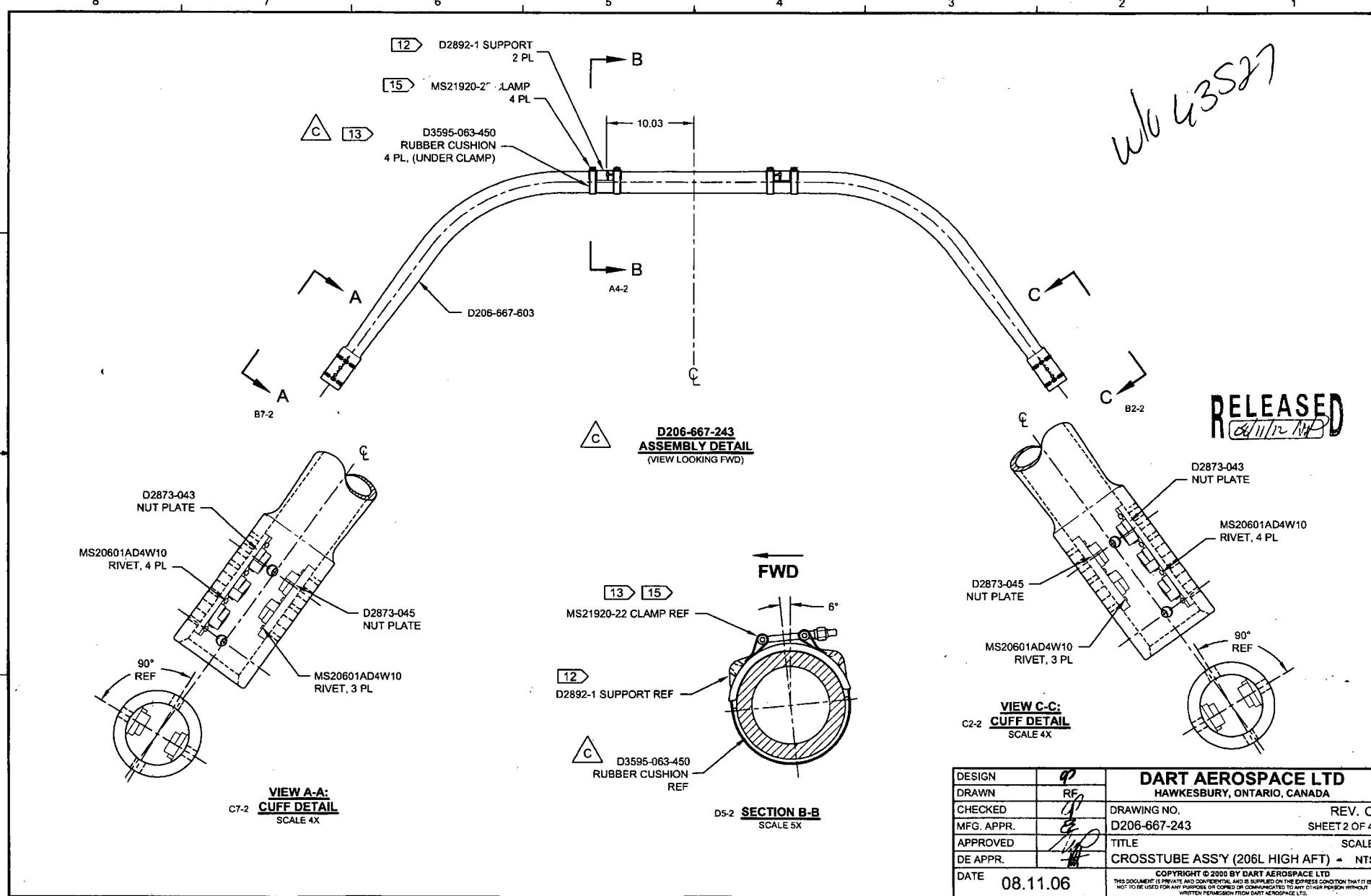
W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



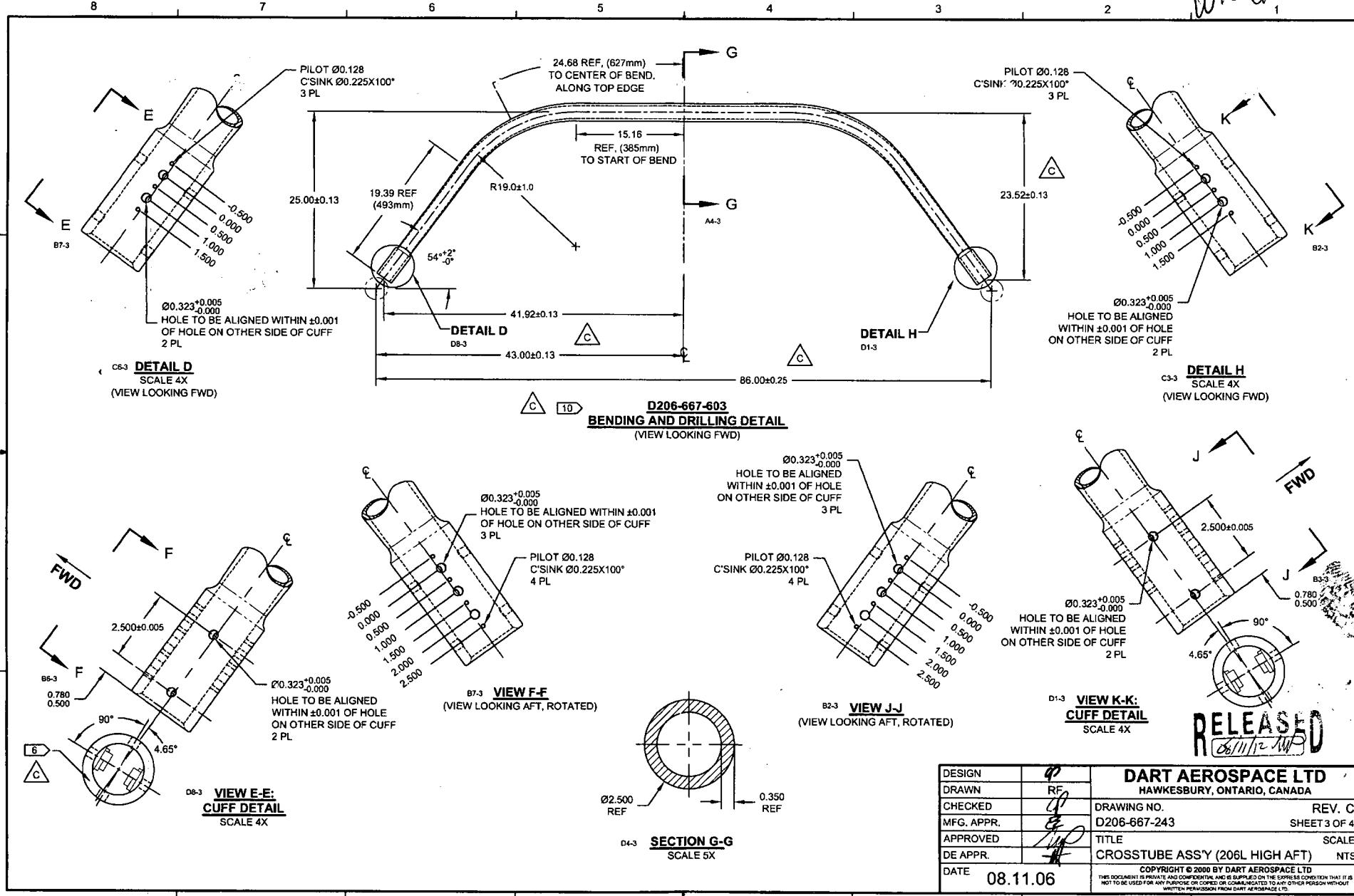
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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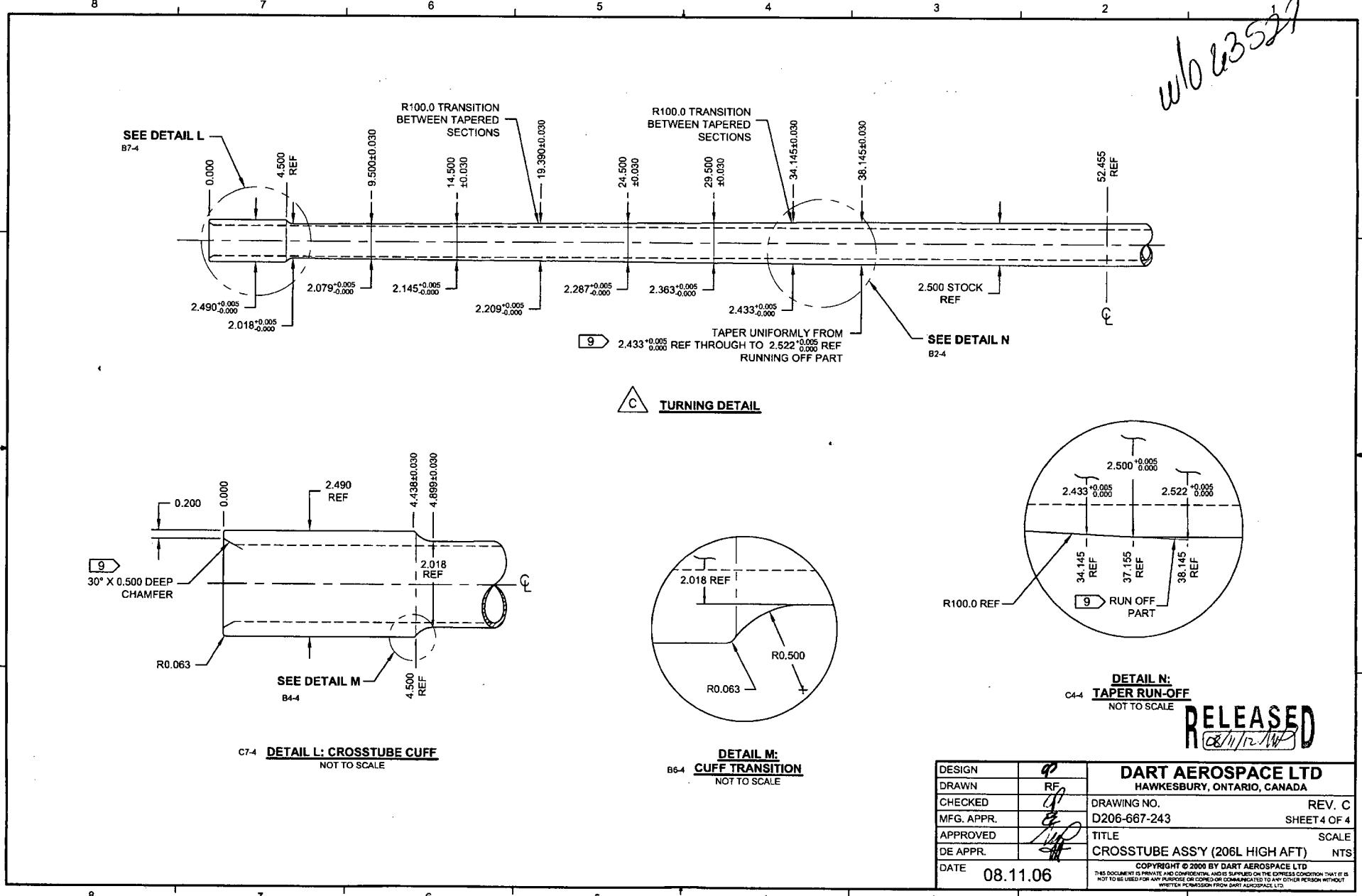
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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W/O		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

LIQUID PENETRANT TEST REPORT

P- 05491

CLIENT DART AEROSPACE
 ATTENTION LINDA LACELLE / CHARLOTTE (if n)
 ADDRESS 1270, ABERDEEN ST.
 HAWLESBURY, ON
 PROJECT Wet Fluorescent Penetrant Testing on "CROSSSTUBES" & "MOUNT"
 ITEM(S) EXAMINED SEE W.O.# Below in Results

JOB DESCRIPTION PROCEDURE NO. LT-003 REV./DATE 2008 TECHNIQUE NO. LT-002 REV./DATE 2008

ART NO. MATERIAL THICKNESS 1/16

SCOPE PERFORMED A WET FLUORESCENT INSPECTION BY LIQUID PENETRANT ON 100% OF THE EXTERNAL SURFACE

TEST DETAILS

METHOD	<input checked="" type="checkbox"/> FLUORESCENT	<input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH	<input type="checkbox"/> SOLVENT REMOVABLE	<input type="checkbox"/> POST EMULSIFIED
AMILY BRAND	MAGNAFLU				
ENETRANT	ZL-667	MINIMUM DWELL TIME	10 MIN.	BLACK LIGHT S/N 13790	OUTPUT > 1000 μ W/cm ²
ENETRANT REMOVER	H ₂ O	MINIMUM DRY TIME	>10 MIN.	LIGHTING EQUIP.	<input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT
DEVELOPER	SKD-52	MINIMUM DWELL TIME	10 MIN.	OTHER	<input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
DEVELOPER TYPE	<input checked="" type="checkbox"/> NON AQUEOUS	<input type="checkbox"/> AQUEOUS	<input type="checkbox"/> DRY	LIGHT METER S/N	CAL DUE DATE 12/30/2011

TEST SURFACE

URFACE CONDITION	<input type="checkbox"/> AS GROUND	<input type="checkbox"/> AS WELDED	<input type="checkbox"/> MACHINED	<input type="checkbox"/> SHOT BLASTED	<input checked="" type="checkbox"/> CLEAN BARE METAL	
URFACE TEMPERATURE	<input type="checkbox"/> < -4°C/ 20°F	<input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F	<input type="checkbox"/> 10°C/50°F TO 52°C/125°F			
RESULTS	<input type="checkbox"/> METRIC <input checked="" type="checkbox"/> IMPERIAL					<input type="checkbox"/> > 52°C/125°F

ITEM COMMENTS REPT/REP.

F 1	CROSSTUBE - W.O. ID 63527	✓
F 2	CROSSTUBE - W.O. ID 63528	✓
F 3	CROSSTUBE - W.O. ID 63533	✓
F 4	CROSSTUBE - W.O. ID 63539	✓
F 5	CROSSTUBE - W.O. ID 63744	✓
F 6	CROSSTUBE - W.O. ID 63745	✓
F 7	4X Mount(s) - W.O. ID 61889	✓

CROSSTUBE AFT
 ITEM ID: D 206-667-203 (ITEM# 1,2)
 ITEM ID: D 212-664-201 (ITEM# 3,4)
 ITEM ID: D 212-664-101 (ITEM# 5,6)
CROSSTUBE FWD
 ITEM ID: D 3687-1 (ITEM# 7)

MOUNT
 ITEM ID: D 3687-1 (ITEM# 7)

10-11-23

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood at all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the information or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

Performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE	MATT MURDOCH	PRINT	MATT MURDOCH	SIGNATURE	DTR # E 63039
TECHNICIAN (SIGNATURE):				REPORT	
NAME (PRINT):				REVIEWED BY:	
CGSB LEVEL	1 ST TECHNICIAN	SNT LEVEL	2 ND TECHNICIAN	NAME	INITIALS
CGSB REG. NO.	CGSB REG. NO.	CGSB REG. NO.	CGSB REG. NO.		

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